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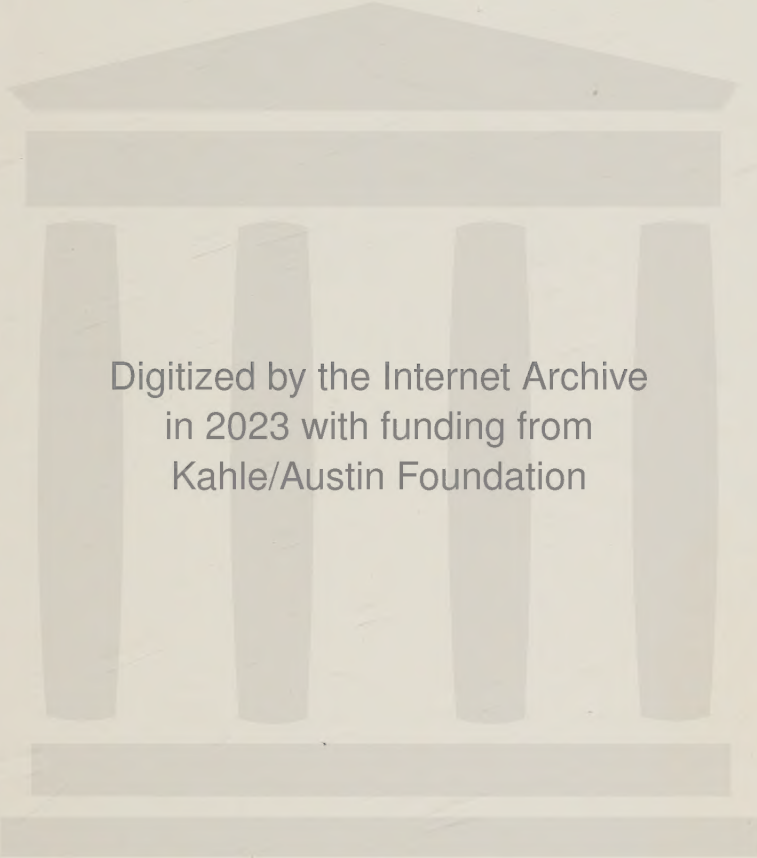
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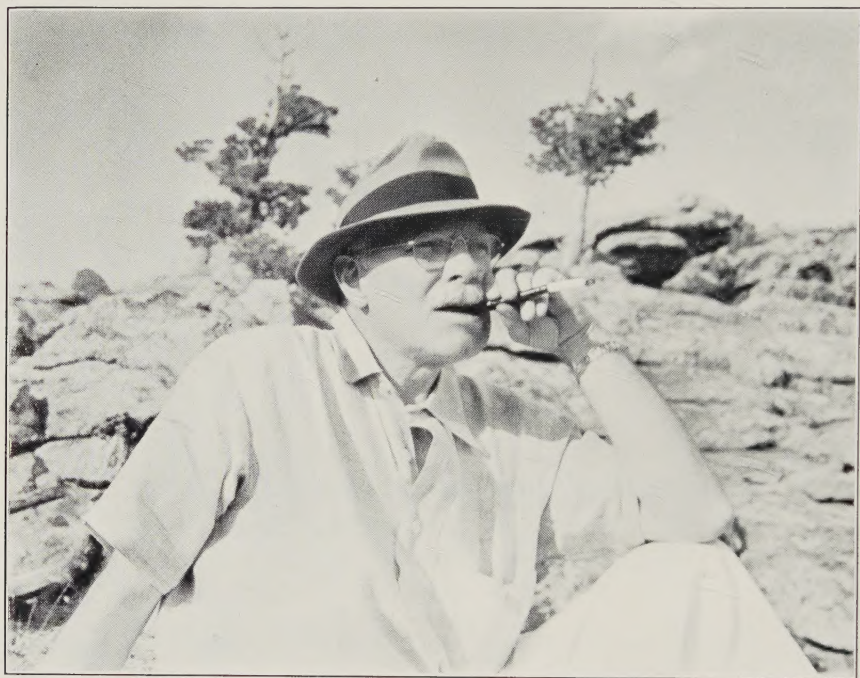
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Very sincerely
Fred K. Butts.

Rhodora

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FREDERIC KING BUTTERS, 1878-1945¹

ERNST C. ABBE

(with portrait)

Felix qui potuit rerum cognoscere causas
Atque metus omnes, et inexorabile fatum
Subjecit pedibus

—Vergil

Fred Butters deeply appreciated the truth of Vergil's aphorism, translating it "Happy the man who is able to know the causes of things, and to put under his feet all fear and inexorable fate."² It is a sentiment which expresses succinctly and aptly the guiding principles of his rich and friendly life.

Butters was born and raised in Minneapolis. Nevertheless, his family environment was New England in character, an influence which was strengthened by visits as a boy to relatives in Massachusetts. This influence colored even his speech, sometimes to the consternation of his classes at examination time, as in the case of the unfortunate student who was surprised

¹ Contribution from the Herbarium of the University of Minnesota, VIII.

This biographical sketch has been made possible through the generous cooperation of Dr. Butters' friends and colleagues. Professor L. I. Smith of the Department of Chemistry, University of Minnesota, has given free access to the original materials concerning Dr. Butters in his possession. To my colleagues, W. S. Cooper, C. S. French, A. O. Dahl, D. B. Lawrence, R. M. Tryon, Jr., and especially to Professor Emeritus C. O. Rosendahl, a life-long friend of Dr. Butters, I am deeply indebted for contributions of fact and anecdote.

The photograph of Dr. Butters was taken August 11, 1938 on Prospect Mountain, Estes Park, Colorado, by J. W. Opie.

Dr. L. I. Smith has provided funds for the portrait.

² From his Presidential Address, University of Minnesota Chapter, Sigma Xi, June, 1938.

to find that there is no such plant as the "Sawed" Fern. His home life as a boy provided a rich background of books and music, intellectual activity, and moderate wealth, all of which entered into the making of Butters, the man. He carried through life a love of reading of the most systematic and catholic sort. This was so thoroughly appreciated by his students and colleagues that the apocryphal story was often told newcomers that "Dr. Butters is now re-reading the *Encyclopedia Britannica* for the third time, and is at the letter 'G'." Certainly his broad scientific knowledge justified the assumption. Music was very important to him. Beethoven was his especial favorite and was played by him on the family piano with the greatest precision, almost as though the notes represented a problem in mathematics. His love of music also found expression in his perennial support of the Minneapolis Symphony Orchestra as one of its patrons.

His means permitted Butters to make a series of trips and excursions which always resulted in additions to his store of knowledge and anecdote as well as to maintain the gracious family home to which he was deeply attached, and to indulge quietly in a wide variety of philanthropies.

While he did not advertise "family", he was aware of the responsibilities attendant upon a distinguished New England ancestry. This reached back on his father's side to William Butter who came from Scotland to settle near Woburn, Massachusetts, before 1666, and on his mother's side to Captain John King who also settled in eastern Massachusetts.

Fred Butters began school in Minneapolis where he prepared himself for attendance at the University of Minnesota by completing the "Latin" course in Central High School, in June, 1895. He entered the College of Science, Literature and the Arts of the University of Minnesota, enrolling in the "Scientific Course". His grades from the start were high, predominantly in the 90's, earning for him election to Phi Beta Kappa and Sigma Xi during his senior year. In later life he was elected to the presidency of the local chapters of both of these honor societies. Mathematics, which he followed in college through integral calculus, he practiced constantly thereafter. Sometimes this practice took the form of mathematical "doodling" which whiled away the time during many a boring Ph.D. examination. Even

yet we find about the Department an occasional box in which came his favorite Benson and Hedges cigarettes, the white paper covered with the details of the expansion of a binomial. Astronomy, which he also studied assiduously in college, provided the basis for a life-long hobby. The other natural sciences were well represented in his undergraduate studies, particularly botany. Here he fell under the spell of that inspiring teacher, Conway Macmillan, whose newly-formed Department of Botany provided Butters with the opportunity to explore the fields of algology, physiology, cytology and morphology by the time he had completed his senior year in June 1899. At this time he had a strong interest in algae which is evidenced by his first paper, "Observations on *Rhodymenia*", published in the second volume of *Minnesota Botanical Studies* (1899). An active interest in algae extended to 1911 when he published a paper on *Liagora* and *Galaxaura*.

The academic year following the completion of his bachelor's degree at Minnesota saw Butters hard at work at Harvard where he obtained an A.B. in the spring of 1900. His interest in thallophytes brought him into close contact with Thaxter, and ultimately led to the publication of a paper on the *Xylariaceae* of Minnesota (1901) and a note in 1903 on a Minnesota species of *Tuber*.

In 1901 Butters joined the staff of the University of Minnesota as Instructor and served continuously on the faculty until his death, with the exception of a leave of absence taken in 1916-1917 to complete his work for the Ph.D. at Harvard.

In 1901 the Minnesota Seaside Station was established on Vancouver Island largely because of the enthusiasm and interest of Professors Macmillan and Tilden, who felt that students at a mid-continental University badly needed the opportunity to study salt-water plants in their native habitats. That summer was the first of several spent by Butters at the Station. He first applied himself to the study of marine algae; later his interests turned to Ferns and Gymnosperms. He also vastly enjoyed the extra-curricular activities at the Station. In one of these, the cult of the mythical Hodag, he became the mock High Priest; another was his post as skipper of the large dug-out canoe in which supplies for the Station were ferried ashore from the

small coastal steamer. This canoe he had to guide between the numerous off-shore rocks and through the high surf. Out of such experiences came a great fund of stories, one of his favorites concerning the time when the stopper came out of the hole in the bottom of the canoe. He would graphically describe how the salt water spurted up and threatened a precious load of microscopes by promising to swamp the canoe, passengers, microscopes and all.

Butters spent the summer of 1902 in Europe with his friend H. L. Lyon. His association with Lyon on this trip and in the Department of Botany led to a life-long interest in embryology. An immediate evidence of this was the publication in 1909 of a paper on the seeds and seedlings of *Caulophyllum thalictroides*. He was deeply intrigued by the relation between the monocotyledonous and dicotyledonous state. Ultimately this interest led to the development of courses in plant anatomy, a subject which he taught throughout his academic career.

In 1904 Butters met E. W. D. Holway, an Iowan banker. Holway was an expert on rusts, and also a mountain climber of great ability, and his enthusiasm for this sport was readily transmitted to Butters. From that time on, hardly a summer passed that Butters did not find at least some time to visit Glacier House and his beloved Selkirk Mountains. He used to say that he had but one criticism to make of Minnesota—that it had no mountains, and he once suggested the provision of such as a worthy project for the WPA! Butters and Holway were later joined by Howard Palmer, a Connecticut manufacturer, and for parts of many summers this trio was very active in exploring the Selkirk Mountains. This region was very close to Butters' heart and it is fitting indeed that the Geographic Board of Canada has recently named the highest peak in the Battle Range of the Selkirks Mt. Butters, in his honor. Along with his strenuous pioneer mountaineering in the Selkirks he collected plants, summarizing his observations in "The Vegetation of the Selkirk Mountains" as an appendix to Howard Palmer's book "Mountaineering and Exploration in the Selkirks". Another article dealing with some peculiar cases of plant distribution in the Selkirks was also published in 1914 in *Minnesota Botanical Studies*. Butters' achievements in mountaineering were widely

recognized among the mountaineering fraternity and he cherished greatly his memberships in the American Alpine Club, the Alpine Club of Canada, and the Royal Geographical Society.

After he became interested in mountaineering, Butters still found time to go to the Minnesota Seaside Station. In the summer of 1906, he, C. O. Rosendahl, N. L. Huff and Arthur M. Johnson made an epic trip across Vancouver Island by way of a purported wagon road. Butters' comment on this was that in order to get a wagon across parts of that road they must have taken the wagon apart! This trip was the beginning of a long and close association between Rosendahl and Butters. "Fred" and "Otto" were to take many field trips together and publish much scientific work jointly. Their last visit to the Seaside Station was in the summer of 1910, when they were accompanied by Mrs. Rosendahl.

At about this time Butters and Rosendahl began collaborative publication of the Minnesota "Guides"—Guide to Spring Flowers, to Trees and Shrubs, to Ferns and Fern Allies, to Autumn Flowers—the first being published in 1908. Some went into many editions and one ultimately grew into a widely used book, "Trees and Shrubs of Minnesota", last published in 1928. The book on trees and shrubs so indissolubly linked the authors in the minds of their students that its authorship was attributed among some of them to a mythical "Rosenbutters".

Butters had an initial interest in the flora of Minnesota which was intensified from 1915 on. During that summer, he and Rosendahl acquired a Ford and began active exploration of many out-of-the-way localities in the state. This work led to the publication in 1916 of "Reputed Minnesota Plants Which Probably Do Not Occur In The State". Trips into that part of the Driftless Area which lies in the southeastern corner of the state raised basic questions of plant geography. The "Coastal Plain" element in the flora of the state fascinated him. There arose also the opportunity to check the map of forest distribution published many years before by Upham.³ Butters had noted that Upham showed limited areas of woodland on the north-eastern side of many lakes in the ecotone between prairie and

³ Upham, W. Catalogue of the Flora of Minnesota. Geol. & Nat. Hist. Surv., Twelfth Annual Report (1883), Pt. VI, pp. 1-193. 1884.

forest. He found that these had been mapped accurately by Upham and he liked to theorize concerning their origin, bringing in as factors the age-long burning of the prairies by the Indians, the direction of the prevailing winds, and the role of the lakes as natural barriers.

Then came a most important interlude—his sabbatical year, 1916–17. At this time Butters went to the Gray Herbarium at Harvard to carry out the work for his Ph.D., which was conferred in June, 1917. Although the title of his thesis is "Studies in the Geographical Relations of the Plants of the Selkirk Mountains", the published results of his work at the Gray dealt with *Lathyrus*, *Pellaea*, *Athyrium* and *Botrychium*. His work on *Lathyrus* was published jointly with his good friend Harold St. John.

While the deep interest which Butters had in ferns may be traced in the memory of his friends to the early days at the Minnesota Seaside Station, it did not crystallize until ten years later at the Gray. The ferns from that time on became the center of his scholarly activity, as evidenced by his advanced course on "Pteridophytes" which he gave regularly thereafter, by the meticulous care with which he managed the Fern Herbarium at the University of Minnesota, and by his publications.⁴ It is impossible to pass over the Gray Herbarium year without mentioning his friendship with Weatherby and Fernald. Scarcely a day in the University of Minnesota Herbarium would pass, as his close associates will testify, without the name of one or the other coming up in conversations concerning taxonomic and phytogeographical problems. He held their judgment and achievements in the highest regard and often referred to his association with them at the Gray. Undoubtedly they deeply influenced his taxonomic thinking and stimulated his natural interest in problems of plant distribution and plant geography in the world at large.

Weatherby still tells of Butters' year at the Gray. Apparently Butters would apply himself closely to business all through the week. But when Saturday afternoon came, Butters, the born raconteur, would regale his appreciative listeners with story after story of his experiences in the Selkirks. These adventures were,

⁴ Butters' friends, when they refer to his papers, may well remember with amusement one of his favorite definitions—"A scholarly paper consists of a trickle of words in a sea of footnotes".

of course, still very fresh in his mind. And as the stories progressed his listeners felt themselves to be almost literally with him as he faced the mother grizzly and her cubs in a narrow canyon, or as he clung precariously in a difficult traverse on Mt. Sir Sanford.

During his year at the Gray, Butters was elected to the New England Botanical Club. This, together with membership in the American Fern Society, he valued in a very personal way.

After his return to Minnesota, Butters devoted the greater share of his research time to ferns and other plants of Minnesota. His teaching activities expanded to include the direction of graduate students. These he put to work on problems in his old favorite field of embryology. Thus, Buell worked on *Acorus* and Earle on *Magnolia*. At the undergraduate level of teaching his ability was recognized by his appointment to the Committee of the Botanical Society of America on the Teaching of Botany in American Colleges and Universities. The work of this Committee extended over several years and culminated in the publication of the widely consulted Bulletins 119 and 120.⁵ Another evidence of Butters' breadth of interest in teaching was his successful participation in one of the early survey courses in the natural sciences at the University of Minnesota, "Man in Nature and Society",—a precursor of courses so familiar to students of the General Education movement today.

Butters was most generous in helping colleagues with research problems. Two concrete cases come to mind, the one related to his knowledge of classical languages and the other to his mathematical bent. With reference to the first, Mrs. Sorokin acknowledged⁶ his initiation of the terms monobrachial, dibrachial, etc. to describe certain chromosome-types. The second is to be found in his careful checking of the formulas for sectional area and volume of the paraboloid of revolution as applied to the shoot apex of maize.⁷

⁵ An Exploratory Study of the Teaching of Botany in the Colleges and Universities of the United States. Bot. Soc. Amer. Bull. **119**, pp. 1-46. 1938.

Achievement Tests in Relation to Teaching Objectives in General College Botany. Bot. Soc. Amer. Bull. **120**, pp. 1-71. 1939.

⁶ H. Sorokin. Idiograms, nucleoli, and satellites of certain Ranunculaceae. Amer. Jour. Bot. **16**: 408. 1929.

⁷ Randolph, L. F., E. C. Abbe, J. Einset. Comparison of shoot apex and leaf development and structure in diploid and tetraploid maize. Jour. Agric. Res. **69**: 47-76. 1944.

During World War I, Butters taught mathematics and other non-botanical courses so effectively that Burton, then President of the University of Minnesota, is said to have commented that if Dr. Butters were completely ignorant of Botany the University would still be able to appoint him as Professor of Mathematics, or of Astronomy, or of Geology, or of Pharmacy.

President Burton's comment about Butters' ability to teach pharmacy is significant and perhaps requires explanation. Pharmacy was an early love and one with which Butters retained contact always. He taught Botany to generation after generation of young pharmacists (over 2000 of them) from 1901 on. He appreciated the privilege of membership on the staff of the College of Pharmacy and enjoyed his associations there. He served for many years as botanical consultant to the staff of the *National Formulary*.

As a geologist, Butters became deeply engrossed in the study of glacial phenomena which are so evident but which were so poorly understood in the state of Minnesota. He and Rosendahl together developed a deep knowledge of these phenomena which contributed richly to their botanical teaching. Professor W. H. Emmons, formerly head of the Department of Geology, once remarked that Butters was the best geologist on the campus outside of the Department of Geology. This was indeed a compliment in view of the distinguished character of the Geology Department and of its head. At first it was the Driftless Area that drew Butters' attention. But, in the course of an automobile trip to northeastern Minnesota and near-by Canada with some of his non-botanical friends, he discovered evidence suggesting the existence of another area which possibly had not been glaciated during the Wisconsin. The Minnesota portion of this area (in Cook County) he studied with the greatest care during the last dozen or so years of his life. It was the good fortune of the writer to be his companion on many trips to Cook County. These were indeed a revelation since there is no better way to become acquainted with a man than to camp with him, and these experiences have left nothing but admiration and affection. They also provided an opportunity to become acquainted with an old mountaineer's field cuisine. And it was *not* the old mountaineer who developed acidosis from the monotonous diet

of pancakes and bacon, bannock and bacon, cheese and raisins, and rice and raisins!

During his last dozen years Butters was increasingly afflicted with illnesses—jaundice, diabetes, severe neuritis, and the arteriosclerosis which was the ultimate cause of his death. But his indomitable spirit brought him to the Herbarium in spite of these afflictions. Never a day passed until near the very end that he did not deliver his lectures on time and work on the specimens collected during preceding field seasons. Furthermore, he did not permit his physical condition to interfere with his field work except when the attacks were most severe. This strength of will was with him throughout his life and is well illustrated by a story from the early days which he and Rosendahl liked to tell on each other. They were out on Cowichan Lake on Vancouver Island while collecting in the early 1900's. The wind had risen and the waves were breaking on the rocks on shore—they were in a fragile dugout canoe—and caution dictated a prompt retreat. But Butters had sighted a specimen of *Cornus Nuttallii* which he felt they should have. Rosendahl objected. But Butters would say in telling the story, "That specimen is in the Herbarium today! You see *I* was steering!"

It is difficult to refrain from quoting a very graphic description of Dr. Butters which is incorporated in the following bit of doggerel composed about him by one of his students. It was presented as part of the program at the dinner given for Professor and Mrs. Rosendahl on the occasion of Professor Rosendahl becoming Professor Emeritus. Butters, of course, was Master of Ceremonies.

"Professor Butters

Beside a cluttered desk I sit
Mid books and paper piled high
My jaws clamped on a cigarette
Which sprinkles ash on coat and tie.

Leisurely I turn the pages
Of a book I know by heart
For the wisdom of the sages
It's my duty to impart."

Much could be said of Butters' interest in his Faculty Dining Club and the breadth of subject matter covered in his talks

before the members; of his interest in the origin and development of the Campus Club (the faculty club at the University of Minnesota); of his broad circle of acquaintances on the faculty; and of his loyalty to old and new friends and students. To elaborate on these subjects would but provide further examples of his wisdom and urbanity, of his virtues and perhaps of some of his foibles, of his uncompromising support of what he knew to be right and good, and of his philosophical cast of mind. His friends, who are many, know these things, and know, too, that his loss has been a deep one for them and for Botany.

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¹ Assistance in the preparation of this bibliography has been given by C. O. Rosendahl, Mrs. G. Forsberg, E. C. Abbe, E. B. Fischer, N. L. Huff, P. O. Johnson, L. I. Smith, and C. E. Smythe, all of the University of Minnesota, C. W. Horton of Dartmouth College, and J. Afferbach of the Cooperative Test Service of the American Council on Education.

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 1947. (with E. C. Abbe.) The genus *Poa* in Cook County, Minnesota. *Rhodora*, **49**: 1-21. (Jan. 22).
 1948. (with R. M. Tryon, Jr.) A fertile mutant of a *Woodsia* hybrid. *Amer. Jour. Bot.*, **35**: 132-133. (Mar. 11).
 —. (with E. C. Abbe.) A flora of Cook County, Minnesota. (in preparation).

DEPARTMENT OF BOTANY, UNIVERSITY OF MINNESOTA

VICIA SEPIUM L. IN CANADA.¹—In RHODORA **49**: 288. 1947. Herbert Habeeb reports *Vicia sepium* L. present in the province of New Brunswick, Canada. The present would seem an opportune time to bring together all the Canadian citations available. An earlier review not widely distributed (GROH, HERBERT. Canadian Weed Survey, Second Report, 1943. Mimeographed 1944) was not so complete as the present one.

NOVA SCOTIA: Annapolis Royal, 1921, *Fernald et al*, border of field (Can). PRINCE EDWARD ISLAND: Charlottetown, 1929, *Groh*, fencerow (DAO). NEW BRUNSWICK: St. Stephen, 1926, *Groh* (DAO); St. John, 1926, *Groh* (DAO, Can); St. John, 1930, *Groh* (DAO); East St. John, 1937, *Groh* (DAO); Grand Falls, 1947, *Habeeb* (Gray, as reported above). QUEBEC: Montreal, 1895, *L. R. Jones* (Gray, as reported, RHODORA **2**: 225. 1900). ONTARIO: west of Hamilton, 1895, *J. M. Dickson*, ravine (Can); Lambton Co., Ont., (as reported, Dodge, C. K., in *Ann. Rep. Mich. Acad. Sci.* 1915).

The herbaria above, besides the Gray, are the National Herbarium of Canada, Ottawa (Can), and the Division of Botany and Plant Pathology, Department of Agriculture, Ottawa (DAO).—HERBERT GROH, Division of Botany and Plant Pathology, Central Experimental Farm, Ottawa, Canada.

¹ Contribution No. 933 from the Division of Botany and Plant Pathology, Science Service, Dominion Department of Agriculture, Ottawa, Ontario, Canada.

SOME MINOR FORMS OF *ROSA*.—In working over the species of *Rosa* in eastern North America I find myself looking upon some plants, which have been published as true species or varieties, as minor forms. Those which demand new combinations are the following:

ROSA SETIGERA Michx., var. *TOMENTOSA* Torr. & Gray, forma **serena** (Palmer & Steyermark), stat. nov. Var. *serena* Palmer & Steyermark in Ann. Mo. Bot. Gard. xxii. 569 (1935).

On the same page Palmer & Steyermark treated the unarmed glabrous-leaved *Rosa setigera* as a form, forma *inermis* Palmer & Steyermark, l. c., while the unarmed shrub with dull leaflets tomentose beneath was called a variety because "It appears to be more distinct and constant in its distinguishing characters, as well as more isolated geographically, than the variety based solely on the more or less pubescent character of the leaves". Since, however, unarmed or essentially unarmed shrubs with the foliage of var. *tomentosa* occur far outside "the Ozark region", in Ohio, Indiana, Alabama, etc., the geographic isolation seems less pronounced and the rose which is serene in having no prickles seems to be a form parallel with forma *inermis*, which in the Gray Herbarium is represented chiefly from Ozark Co., Missouri.

R. VIRGINIANA Mill., forma **nanella** (Rydb.), stat. nov. *R. nanella* Rydb. in N. Am. Fl. xxii⁶. 497 (1918).

Surely *Rosa nanella* is only the most stunted and rather xerophytic extreme of *R. virginiana*. It occurs on wind-swept crests, barrens, talus and sand-dunes from eastern Newfoundland south in the coastwise area to New Jersey, but I find no morphological character to separate it from the taller and larger *R. virginiana*.

R. CAROLINA L., forma **glandulosa** (Crépin), stat. nov. *R. parviflora* Ehrh., var. β . *glandulosa* Crépin in Bull. Soc. Bot. Belg. xv. 68 (1876).

Plants with more or less glandular teeth or with glands on the leaf-rachis occur occasionally throughout the broad area of glandless typical *Rosa carolina*, from New England to southern Ontario and southward. They seem to have no distinctive range, and the number of glands on the foliage is thoroughly inconstant. There seems no justification for treating it as a species, as is done by Rydberg in N. Am. Fl. l. c. 500 (1918) and none for his calling

this species *R. serrulata* Raf. As characterized by Rydberg *R. serrulata* is said to have "Leaflets glandular-dentate and usually glandular on the rachis. Branches not bristly or rarely slightly so; teeth of the leaflets ovate" (Key, p. 484), "stipules . . . strongly glandular-ciliate . . . ; petioles and rachis glandular-hispid . . . ; leaflets . . . lance-elliptic or rarely oval . . . , with gland-tipped teeth". How very different was the account of *R. serrulata* Raf. in Ann. Gén. Sci. Phys. v. 218 (1820), repr. as Prodr. Monog. Rosiers, 9 (1820):

23. *Rosa serrulata*. Raf. Tige et pétioles aiguillonés et hispidules, aiguillons stipulaires droits, stipules ciliées; folioles 5-7, obovées, serrétées et serrulées, glabres, pâles en dessous; fleurs 1-3, calices hispides, sépales simples serrulés; fruits globuleux hispidules. Var. *rotundi folia*. Aiguillons menus, droits et nombreux; folioles ovales, arrondies, base entière.

Obs. Arbuste d'un pied; dans les bois avec le précédent, à fleurs roses peu odorantes, médiocres, pétales à peine échancrés. Les dents des feuilles sont serrulées. La variété croît en Kentucky; c'est peut-être une espèce distincte.

Surely Rafinesque would have detected the glands and he would not have called the leaflets "obovées" if they were "lance-elliptic or rarely oval". As to Crépin's *R. parviflora*, var. *glandulosa*, his description was clear: "à dents plus ou moins composées-glanduleuses". Crépin cited no type but several characteristic sheets in the Gray Herbarium bear his annotations made in 1896, "*Rosa humilis* Dents composées-glanduleuses", he then recognizing it as an unnamed form of *R. humilis* Marsh. (1785) = *R. carolina* L. (1753).

R. BLANDA Ait., forma **alba** (Schuette), stat. nov. Var. *alba* Schuette ex Erlanson in Papers Mich. Acad. Sci. v. 88 (1926).

A frequent albino, but certainly a mere color-form, not a geographic variety.

One of the most remarkable of roses only recently described is *Rosa Rousseauiorum* Boivin in Naturaliste Canadien, lxxii. 225 (1945), the third very characteristic species endemic to the area centering on the lower River and the Gulf of St. Lawrence, the new one strongly marked by its very large and dilated stipules (2-3.5 cm. long) bordered by crowded red stipitate glands so that the teeth often appear glandular-pectinate, the sepals 1.8-2.5 cm. long. The earliest collections cited for this endemic of the

lower St. Lawrence were made in 1927. It is, therefore, worth noting that among the accumulation of "unidentified" roses in the Gray Herbarium there is a very characteristic specimen from "Canada, Herb. Shepard", with Crépin's note "*R. blanda* Ait. var. à dents composées-glanduleuses". What Crépin could not have known from this very old specimen (just in bud) is the fact that in maturity the sepals would have become reflexed against the fruit, the very striking character which distinguishes this species, *R. Williamsii* Fernald and *R. johannensis* Fernald from *R. blanda*, in which the sepals form a porrect beak at summit of the fruit. Since this specimen came from "Herb. Shepard" it is probable that John Shepard received it from Frederic Pursh, who explored the lower St. Lawrence.—M. L. FERNALD.

JUGLANS NIGRA OBLONGA IN MISSOURI.—Mr. John T. Woodruff, Pinebrook Farms on Highway 14, Siloam Springs, Howell County, Missouri, has sent to the U. S. Forest Service a few fruits from a black walnut tree on his premises in which and its progeny he has taken much interest. The parent tree was discovered by him in 1934 as "a likely sprout some distance from any other walnut tree." The fruits and relatively rather thin-shelled nuts are distinctly oblong and definitely appear to be forma *oblonga* (Marsh.) Fern. (RHODORA **39**: 334. 1937), which Fernald & Long collected on the banks of the Meherrin River, Southampton County, Virginia, and noted as "The rare form which was described in 1785 by Humphrey Marshall as '*Juglans nigra oblonga*. Black oblong fruited walnut.'"

Sargent indicates in both his *Silva* and *Manual* that black walnut fruits are sometimes oblong but does not differentiate the form by name, range or in any other way. Nor do other publications on black walnut, so far as I have observed. The form may be close to the hort. var. STABLER, the original of which was discovered by Henry Stabler on the Prebe Brothers' farm in Howard County, Maryland. In F. S. Baker's "Black walnut—its growth and management" (U. S. Dept. Agr. Bul. 933. 1921) Missouri, Illinois and Ohio form the bulk of the "primary commercial range" of this species, *i. e.*, as timber (see map, p. 2).—WILLIAM A. DAYTON, U. S. Forest Service.

TWO FORMS IN EUPHORBIA.—

EUPHORBIA IPECACUANHAE L., forma **linearis** (Moldenke), comb. nov. *Tithymalopsis Ipecacuanhae* (L.) Small, f. *linearis* Moldenke in *Phytologia*, ii. 321 (1947). *E. gracilis* Ell. Sk. ii. 657 (1824). *Vallis Ipecacuanha* Raf., var. *linearifolia* Raf. Aut. Bot. 96 (1840).

It is perhaps futile to give names to the many variations of leaf-outline and color in *Euphorbia Ipecacuanhae* but the extreme with linear leaves is possibly more definite than those with oblong, oval or obovate blades. At least on one of our Virginia trips Mr. Bayard Long and I collected in the same habitat plants with leaves of various outlines and color. When these were dried between ventilators and on a hot, sunny roof, the linear-leaves plants were thoroughly dry in a couple of days; those with broader leaves required a full week. This seemed to indicate that the former are less succulent than the latter. Incidentally, Elliott went so far as to treat the linear-leaved form as a distinct species. If anyone is seeking names for the plants with other leaf-outlines he can find them in the writings of Rafinesque.

E. DENTATA Michx., forma **cuphosperma** (Engelm.), stat. nov. *E. dentata*, var. *cuphosperma* Engelm. Bot. Mex. Bound. Surv. 190 (1859). *E. cuphosperma* Boiss. in DC. Prodr. xv². 73 (1862). *Poinsettia cuphosperma* Small, Fl. Se. U. S. 721 (1903).

Although in its extreme development the linear- or narrowly lanceolate-leaved form is striking, it seems to be only a form, for the transition to broad-leaved plants is gradual and the distinction in the seed completely fails.—M. L. FERNALD.

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